**MERCY UNIVERSITY – SHANGHAI JIAN QIAO UNIVERSITY - COHORT**
**Course Syllabus**
**Web Programming**

**Instructor**
  Narasim Banavara, PhD, nbanavara@mercy.edu
  Zhixiong Chen, PhD, zxchen@ieee.org

**Semester**
  class date: 9/2/2024 – 11/24/2024 (12 weeks)
  time: Monday/Wednesday 8:20 – 9:50 AM (Beijing Time)

**Catalogue Description**
  This course offers students a comprehensive introduction to the essential web frameworks needed to build dynamic websites. After establishing a solid foundation in computer programming, the course delves into web application architecture, the Model-View-Controller (MVC) framework, and various web development tools. Students will learn to create dynamic web applications that effectively implement business logic, manage database interactions, and interpret user input.

**Student Learning Outcome (SLO)**
  Upon completing this course, students should be able to do and demonstrate the followings outcomes.
  1. Master a web programming language, specifically Python.
  2. Understand the principles of web application architecture, the Model-View-Controller (MVC) framework, and various web frameworks.
  3. Apply fundamental programming concepts, including data types, loops, conditional structures, input/output operations, and object-oriented principles, to solve basic problems.
  4. Utilize web frameworks to develop dynamic web applications that incorporate appropriate business logic and database interactions.
  5. Present developed web applications effectively.

**Prerequisite**
  Basic computer programming languages and problem-solving skills

**Course Materials**
  Not required. References are given in the class

**Assessment**
  The class is assessed by code practice, midterm exams, term team project, and active participation.
  1. Participation 5%
     Active attendance including class discussion.
  2. Assignments 20%
     Posted after each topic/subject.
  3. One exam 40%
  4. Term project 35%

**Class Logistics**
  • **Learning platform**
     1. Blackboard (BB) is a course management system. All course materials and assignments are posted in the BB. Submissions and grading are also done inside BB.
     2. Please click course learning modules under course contents and navigate to each subject.

3. Download your individual assignment instructions and do your work offline. Once you are done with your work, go back to the course module and upload your work.

- **Class short message (SMG)**
  BB messaging is disabled. So we use class WeChat for such communication.

- **Office hour**: Arrangement will be discussed and announced during the semester.

- **Personal computer**
  It is required for the class. Students need it for class, assignments, and project. Mobile devices like smart phone or iPad are not allowed for class.

- **Course Modality**
  The class is coded online synchronized and team teaching. The zoom link is provided.
  Week 1 – 7: https://mercy.zoom.us/j/94276702173?pwd=tyJVOcbtJzWnbzQ3fjQDbYDbIGmQnB.1
  Week 7 – 12: https://mercy.zoom.us/j/91419802195?pwd=bcibNpxlANoRjNKTGExeJ0h699m62f.1

- **Zoom Etiquettes**
  1. Use a computer with camera, not a smart phone.
  2. Find a quiet corner.
  3. If possible, set up face photo in zoom settings plus official name.
  4. Take notes and ask questions.
  5. Sharing-screen is mandatory for project practice demonstrations.

- **Attendance and Laptop**
  1. Attendance in zoom is mandatory.
  2. Absence for more than three (3) classes may result in an automatic failure, or a lower grade.
  3. Excused absences include documented illness, deaths in the immediate family and other documented crises, religious holy days, and official university activities. Accommodation for these excused absences will be made.
  4. Laptop is required to access the class via zoom.
  5. Share-screen is required when asked to show their code work.

- **Late submission**:
  Students are responsible for turning in any assignments on or before the due dates. A grace period of two days is granted automatically. Submissions passed the grace period will be penalized proportionally.

- **Makeup exams**:
  given only to those students with written proof and/or prior arrangements.

- **Sick day policy**:
  Follow the latest instructions from the University. They need to send a note to the instructor to be excused from absence if they do not feel well. If the number of sick days is over four classes accumulatively, students need to submit a written note from a medical professional or their parents. The note shall not list any detailed medical conditions.

- **Student w/ disabilities**:
  Persons with disabilities who may need classroom accommodation are encouraged to contact their advisor.

**Academic Integrity and Tips for Success**
   **Pledge**

   *"As a student at Shanghai Jian Qiao University, I understand that I am part of a vibrant community committed to the disciplined pursuit of knowledge and the honest communication of truth. This journey is not only about acquiring information but also about developing character and integrity.*

   *I hereby commit to upholding the University Code of Conduct and maintaining the highest standards of academic integrity. In every aspect of my academic journey, from examinations to research and collaborative projects, I pledge to be truthful and authentic. Any work I claim as my own will be genuinely mine, and I will give appropriate credit to others where it is due.*

   *I also commit to fostering an inclusive and respectful environment, valuing the diverse backgrounds and perspectives within the Mercy community. My interactions will be fair and honest, reflecting my dedication not only to personal growth but also to the betterment of the community.*

   *As I embark on this educational adventure, I am reminded that the choices I make here will shape my intellectual and ethical development. I embrace this responsibility, promising to carry these values beyond the university walls, into my future endeavors and interactions."*

**Academic Honesty and Collaboration:**
   1. **Original Work**: Always submit work that represents your original words or ideas.
   2. **Citing Sources**: If you use words or ideas that are not your own, you must cite all relevant sources and clearly indicate the extent of their use. This includes information from all hard copy and electronic publications, and verbal or visual communications from identifiable sources.
   3. **Specific Prohibitions**:
      – Do not submit work that is not your own.
      – Do not provide your work to others to use as their own.
      – Do not plagiarize from any source, published or unpublished.
      – Do not attempt to deceive the instructor.
   4. **Collaboration**: Academic honesty does not preclude discussing ideas and assignments with classmates or others. Intellectual exchange and collaboration are strongly encouraged, provided they adhere to these principles of honesty.

**Tips for Success**: A disciplined approach is a key to this class.
   • **Expectation:**
      Students are expected to spend three to nine hours (in addition to the lecture) each week in the assigned reading, homework, and lab projects.
      – Come prepared for the class and engage with the class.
      – Do all the assigned work on time and review topics regularly.
      – Network with fellow classmates- make sure to get their contact information.
      – Exchanging or sharing thoughts on assigned work is encouraged. But "copy and paste" is prohibited.

   • **Reading and Study Habits:**
      1. **Consistent Study Routine**: Aim to study daily for an hour or two, rather than cramming 10 hours into a single day. Regular, shorter study sessions are more effective for retention and understanding.
      2. **Thorough Understanding**: Avoid rushing through content. Take time to digest the material. Be patient and persistent. Always take notes and formulate questions as you read.

3. **Engaged Learning**: When watching videos or reading fact sheets, take detailed notes. List questions that arise and mark unclear points for further study or discussion with the instructor, peers, using online resources, or AI assistants like ChatGPT.
4. **Avoid Mid-Semester Slump**: High initial motivation is great, but consistency is key. We've observed students starting strong, fading mid-semester, then rushing at the end. This approach is often not successful. Stay engaged throughout the semester.

- **Internet Search and AI Assistant Use:**
  1. **Leverage Online Resources**: The internet is a vast repository of knowledge. Starting your research with Google is fine, but remember it's just a starting point.
  2. **Critical Use of AI Assistants**: Using AI assistants such as ChatGPT in this class is encouraged. However, approach their responses critically. Do not submit their answers directly; instead, use them as a foundation for your own research, curation, and investigation.

Contents

| Part I: Python Programming Foundations (6 weeks) | |
|---|---|
| **module** | **Topic** |
| Basics | Introduction to Programming<br>Variables, Input, Processing and Output |
| | Expressions, Calculations<br>math module, random module |
| Decision / Repetition | Decision Structures and Boolean Logic (if, if-else, if-elif-else statements), Nested if Statements, Logical Operators |
| | Repetition Structures (loops) – while loops, for loops, running totals, input validation loops, nested loops |
| Function / Module | Functions and Modules – void functions, value returning functions, local variables, global variables, modules |
| String | String Operations – basic string operations, string slicing, testing, searching and manipulating strings |
| List | Lists and Tuples – slicing lists, finding items in lists, copying and processing lists, two-dimensional lists, tuples |
| Data Structure | Dictionaries and Sets |
| | Recursion (if possible), problem solving, programs |
| Week 7 | **Exam** |
| | |
| Part II: Web Framework and Web Project (5 weeks) | |
| Web Framework | Three tier web architecture<br>Software Architecture Patterns<br>MVC<br>Web Framework |
| Djangle Setup | Project to be built<br>Structure (Apps, Files, Flows)<br>Set Environment and create apps structure |
| App Skelton | Error Message<br>Create App<br>Register App<br>Build routes<br>Create view<br>Create template |

| | Style |
|---|---|
| App Development | Modules<br>SQLite and SQL<br>Shell<br>Routes, views and templates<br>Debugging<br>URL |
| Week 5: Showcase | **Student Project Presentations and demo** |